Luminant

Rafael Flores
Senior Vice President
& Chief Nuclear Officer
rafael.flores@luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254 897 5590
C 817 559 0403
F 254 897 6652

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REF. # 10CFR50.73(a)(2)(iv)(A)

December 18, 2013

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT DOCKET NO. 50-446 LICENSEE EVENT REPORT 446/13-002-00, UNIT 2 REACTOR TRIP DUE TO RELAY ACTUATION

Dear Sir or Madam:

Enclosed is Licensee Event Report (LER) 446/13-002-00, "Unit 2 Reactor Trip Due to Relay Actuation," for Comanche Peak Nuclear Power Plant (CPNPP) Unit 2.

This letter contains no new regulatory commitments regarding CPNPP Units 1 and 2.

Should you have any questions concerning this submittal, please contact Tamera Ervin-Walker at (254) 897-6902.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By: _____
Thomas P. McCool
Vice President, Station Support

c - Marc L. Dapas, Region IV
Balwant K. Singal, NRR
Resident Inspectors, Comanche Peak

IE22
NRR

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES:10/31/2013

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Comanche Peak Nuclear Power Plant (CPNPP) Unit 2	05000446	1 OF 4

4. TITLE
Unit 2 Reactor Trip Due to Relay Actuation

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCUMENT NUMBER
11	01	2013	13	002	00	12	18	2013	FACILITY NAME	DOCUMENT NUMBER 05000

9. OPERATING MODE
1

10. POWER LEVEL
100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	VOLUNTARY LER

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Timothy A. Hope, Manager, Nuclear Licensing	254-897-6370

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

At 2146 Central Standard Time (CST) on 11/1/2013, Unit 2 was in Mode 1 at 100% power when the reactor tripped during Solid State Protection System (SSPS) slave relay testing. This test utilizes a blocking circuit to verify the operability of the slave relay which trips the main turbine and both main feedwater pump turbines, on a Hi-Hi steam generator level or safety injection (SI). While positioning the slave relay switch in a testing lineup, the relay actuated. The Unit 2 turbine tripped as well as both main feedwater pumps. The trip of both main feedwater pumps started all three Auxiliary Feedwater (AFW) Pumps. All systems responded as expected. The cause of the Unit 2 reactor trip was an original design issue with the main turbine test cabinet. The corrective action is to add a test signal electrical interlock with the blocking relay to prevent slave relay actuation until the block is established for test circuits in Units 1 and 2. All times in this report are approximate and CST unless noted otherwise.

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION:

50.73(a)(2)(iv)(A) "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)."

B. PLANT CONDITION PRIOR TO EVENT:

On November 1, 2013, Comanche Peak Unit 2 was in Mode 1, Power Operation, operating at approximately 100% power.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no inoperable structures, systems, or components that were inoperable at the start of the event that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES:

Procedure OPT-406B-1 performs the surveillance test of the Unit 2 Train A K620 slave relay. The test utilizes a blocking circuit to verify the operability of the slave relay which trips the main turbine and both main feedwater pump turbines, on a HI-HI steam generator level or safety injection (SI). No actuation should occur.

The procedure step 17 turns switch 2-TS-1/K620 to the PUSH TO TEST position. The PUSH TO TEST position establishes the block of the main turbine and feedwater trip signal from auxiliary relay 2-KXA/0620A. Step 18 verifies the block, then step 19 actuates the relay by depressing the switch.

On November 1, 2013 at 2146 CST, the Unit 2 Reactor Operator (utility, licensed) at the CP2-EIPRCV-13 cabinet in the control room was turning switch 2-TS-1/K620 to the PUSH TO TEST position in accordance with procedure OPT-406B-1 step 17 when the unanticipated trip of the main turbine and feedwater pumps occurred followed by automatic actuation of a reactor trip. The control room operators immediately entered procedure EOP-0.0B, "Reactor Trip or Safety Injection" in response to the reactor trip.

Operations issued a shift order on 11/05/2013 to not perform slave relay testing involving blocking circuits for the main turbine and main feedwater pumps until further notice. These include all tests utilizing test switches in the main turbine and feedwater pump test cabinets.

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL PERSONNEL ERROR

Operators (utility, licensed) in the Unit 2 Control Room received a Unit 2 steam generator Hi-Hi level trip.

II. COMPONENT OR SYSTEM FAILURES

A. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

Not applicable – There were no component or system failures.

B. FAILURE MODE, MECHANISM, AND EFFECTS OF EACH FAILED COMPONENT

Not applicable - There were no component or system failures.

C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

Not applicable – There were no component or system failures.

D. FAILED COMPONENT INFORMATION

Not applicable - There were no component or system failures.

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

Both motor driven auxiliary feedwater pumps and the turbine driven auxiliary feedwater pump started as expected as a result of the reactor trip.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

Not applicable - there was no safety system train inoperability that resulted from this event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

This event is bounded by the CPNPP Final Safety Analysis Report (FSAR) accident analysis which assumes conservative initial conditions which bound the plant operating range and other assumptions which could reduce the capability of safety systems to mitigate the consequences of the transient.

This event is bounded by the analysis of the turbine trip presented in Section 15.2.3 of the CPNPP FSAR. The analysis uses a conservative assumption to demonstrate the capability of pressure relieving devices and to demonstrate core protection margins. The event of November 1, 2013, occurred at 100% reactor power, and all systems and components functioned as designed.

Based on the above, it is concluded that the health and safety of the public were unaffected by this condition and this event has been evaluated to not meet the definition of a safety system functional failure per 10CFR50.73(a)(2)(v).

IV. CAUSE OF THE EVENT

The direct cause of the event was an invalid input from switch 2-TS-1/K620 during the rotation to the PUSH TO TEST position that resulted in the unanticipated actuation of auxiliary relay 2-KXA/0620 before blocking the output with relay 2-KT/0080-1.

The cause is that the original design for the 2-KXA/0620A test circuit in CP2-EIPRCV-13 did not include an electrical interlock to address the possibility of the 2-TS-1/K620 L21-L22 contact closing prior to establishing the block of end device actuation.

V. CORRECTIVE ACTIONS

The interim corrective action is to not perform the test in Mode 1. The long term corrective action is to add a test signal electrical interlock with the blocking relay to prevent slave relay actuation until the block is established for test circuits in Units 1 and 2.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar reportable events at CPNPP in the last three years.